Code No: **R41032**   **R10**   **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February/March - 2018
CAD/CAM
(Common to Mechanical Engineering & Automobile Engineering Departments)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1   Write a short note on the following.
   a)   Primary and secondary memory.
   b)   Track ball
   c)   LCD display
   d)   Drum plotter
   e)   Cloud storage system.   [15]

2   a)   A   square   of   side   30   units   has   its   co-ordinates
         A(15,15),B(45,15),C(45,45),D(15,45). Perform the following transformations
         in succession and show it on the paper with proper scale.
         (i)   Scale it by factor 1.25
         (ii)   Rotate about origin by 25^0 anticlockwise.   [8]
   b)   What is clipping? Explain about Sutherland-Hodgeman polygon clipping
        algorithm.   [7]

3   a)   The co-ordinates of four control points relative to a curve are given by
         P1(2,2,0), P2(2,3,0),P3(3,3,0) and P4(3,2,0). Write the equation of Bezier
         curve. Also find the co-ordinate pixels of the curve for $U = 0,\frac{1}{4},\frac{1}{2},\frac{3}{4},1$. Also plot
         Bezier curve.   [8]
   b)   Write a short note on (i) Sweep surfaces and (ii) Lofted surfaces.   [7]

4   a)   Write a short note on the following commands.
         (i)   Move
         (ii)   Copy
         (iii)   Offset
         (iv)   Mirror.   [8]
   b)   Differentiate between wireframe modeling and solid modeling.   [7]

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5 a) Write manual part program for the part shown in the following figure 5 (a). For each part write two programs one to drill the holes and the other to perform milling. The part material is low carbon steel and the cutters are HSS. Part thickness is 0.5 mm, spindle speed is 1000 rpm and feed rate is 0.2 mm/rev.
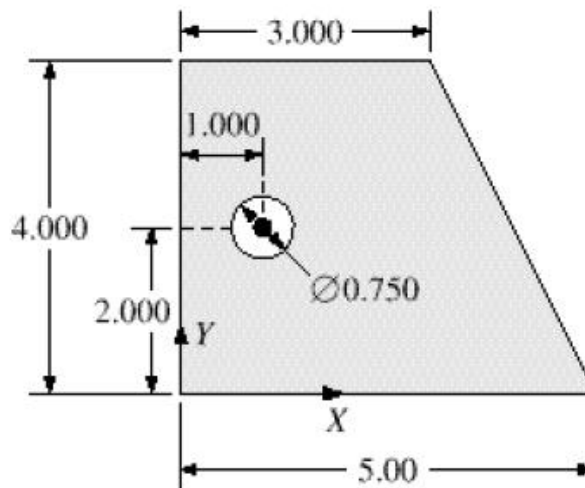

Figure 5 (a)

[8]

   b) Explain the structure of CNC machine tools. [7]

6 a) Describe the modules and knowledge bases of a CAPP system. [8]
   b) Write any four advantages and limitations of group technology. [7]

7 a) What is automated inspection? Explain the importance of inspection timing procedure in relation to the manufacturing process. [8]
   b) Explain about the inspection method which uses light to accomplish the measurement or gauging cycle in detail with neat diagram. [7]

8 a) Write a short note on socio-techno-economic aspects with respect to CIM. [8]
   b) Explain about automated material handling and storage system. [7]